

Analysis of phase state diagrams of mixtures organic substances of natural and synthetic origin

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Abstract

Phase analysis of systems simulating the basis of the soft medicinal forms is of current interest because it is possible to determine the physical and chemical components incompatibility and to correct purposefully the ratio of base components in order to fulfill the requirements for the melting/solidification temperature range. We analyzed the phase bases diagrams and generalized the effects of physical incompatibility of the bases, containing organic substances of natural origin, with benzopyran derivatives, furan derivatives and p-aminobenzoic acid, which are used as vitamins and antibiotics in the soft dosage forms manufacture. Mixtures of organic substances of synthetic origin – polyethylene glycols of different molecular weight, low molecular weight polyethylene and paraffin – do not display physical incompatibility with low molecular weight ester compounds and furan derivatives, which are used in the drug manufacturing technology as preservatives and vitamins. The addition of high molecular weight ester compounds and polyethylene oxide derivatives (emulsifiers T-2 and TWEEN-80) significantly changes the melting/solidification temperature range of any kind of base. Practical recommendations for correcting the components ratio of the bases are presented in the article when the various auxiliary and pharmacologically active substances are added to the mixture.

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